

## CLAIMS

1. A data transfer control device for transferring data among a plurality of nodes that are connected to a bus, said data  
5 transfer control device comprising:

packet shaping means for receiving a series of self-identification packets that are transferred from said nodes, and shaping said transferred series of said self-identification packets into a packet having a frame made of control information that is used by an upper layer and data that is formed from an  
10 assembly of said transferred series of said self-identification packets; and

write means for writing the shaped packet to a storage means.

- 15 2. The data transfer control device as defined in claim 1, wherein said packet shaping means erases error check information within each of said self-identification packets when each of said self-identification packets comprises error  
20 check information, and shapes said transferred series of said self-identification packets into a packet having a frame made of data formed from an assembly of said self-identification packets each of which error check information has been erased, and said control information.

- 25 3. The data transfer control device as defined in claim 2, wherein said packet shaping means determines whether or

not there is an error in said self-identification packets that are transferred from said nodes, based on said error check information, and appends status information to control information of the packet to indicate whether or not there is  
5 an error in said self-identification packets.

4. The data transfer control device as defined in claim 1,  
wherein said packet shaping means appends status  
information to control information of the packet to indicate  
whether or not said self-identification packets were received  
10 during a self-identification period.

5. The data transfer control device as defined in claim 2,  
wherein said packet shaping means appends status  
information to control information of the packet to indicate  
whether or not said self-identification packets were received  
15 during a self-identification period.

6. The data transfer control device as defined in claim 3,  
20 wherein said packet shaping means appends status  
information to control information of the packet to indicate  
whether or not said self-identification packets were received  
during a self-identification period.

25 7. The data transfer control device as defined in claim 1,  
further comprising:

packet division means for writing control information of

the packet into a control information area of said storage means and data of the packet into a data area of said storage means, said storage means being randomly accessible and being divided into the control information area and the data area; and

5 means for appending a data pointer indicating an address of data to be written to said data area, to said control information.

8. The data transfer control device as defined in claim 2, further comprising:

10 packet division means for writing control information of the packet into a control information area of said storage means and data of the packet into a data area of said storage means, said storage means being randomly accessible and being divided  
15 into the control information area and the data area; and

means for appending a data pointer indicating an address of data to be written to said data area, to said control information.

20 9. The data transfer control device as defined in claim 3, further comprising:

packet division means for writing control information of the packet into a control information area of said storage means and data of the packet into a data area of said storage means,  
25 said storage means being randomly accessible and being divided into the control information area and the data area; and

means for appending a data pointer indicating an address

of data to be written to said data area, to said control information.

10. The data transfer control device as defined in claim 4,  
5 further comprising:

packet division means for writing control information of the packet into a control information area of said storage means and data of the packet into a data area of said storage means, said storage means being randomly accessible and being divided  
10 into the control information area and the data area; and

means for appending a data pointer indicating an address of data to be written to said data area, to said control information.

11. The data transfer control device as defined in claim 7,  
15 wherein said packet division means writes data of the packet obtained by shaping said series of said self-identification packets into an area within said storage means that is dedicated to self-identification packets.

20

12. The data transfer control device as defined in claim 8,  
wherein said packet division means writes data of the packet obtained by shaping said series of said self-identification packets into an area within said storage means  
25 that is dedicated to self-identification packets.

13. The data transfer control device as defined in claim 9,

wherein said packet division means writes data of the packet obtained by shaping said series of said self-identification packets into an area within said storage means that is dedicated to self-identification packets.

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14. The data transfer control device as defined in claim 10, wherein said packet division means writes data of the packet obtained by shaping said series of said self-identification packets into an area within said storage means that is dedicated to self-identification packets.

15. The data transfer control device as defined in claim 1, further comprising:

means for detecting whether or not the current period is a self-identification period, based on status information that has been sent from a lower layer;

wherein said packet shaping means regards a series of packets that have been transferred in during said self-identification period as self-identification packets, and shapes said series of said self-identification packets.

16. The data transfer control device as defined in claim 2, further comprising:

means for detecting whether or not the current period is a self-identification period, based on status information that has been sent from a lower layer;

wherein said packet shaping means regards a series of

packets that have been transferred in during said self-identification period as self-identification packets, and shapes said series of said self-identification packets.

- 5 17. The data transfer control device as defined in claim 3, further comprising:

means for detecting whether or not the current period is a self-identification period, based on status information that has been sent from a lower layer;

10 wherein said packet shaping means regards a series of packets that have been transferred in during said self-identification period as self-identification packets, and shapes said series of said self-identification packets.

- 15 18. The data transfer control device as defined in claim 4, further comprising:

means for detecting whether or not the current period is a self-identification period, based on status information that has been sent from a lower layer;

20 wherein said packet shaping means regards a series of packets that have been transferred in during said self-identification period as self-identification packets, and shapes said series of said self-identification packets.

- 25 19. The data transfer control device as defined in claim 7, further comprising:

means for detecting whether or not the current period is

a self-identification period, based on status information that has been sent from a lower layer;

wherein said packet shaping means regards a series of packets that have been transferred in during said self-identification period as self-identification packets, and shapes said series of said self-identification packets.

20. The data transfer control device as defined in claim 11, further comprising:

means for detecting whether or not the current period is a self-identification period, based on status information that has been sent from a lower layer;

wherein said packet shaping means regards a series of packets that have been transferred in during said self-identification period as self-identification packets, and shapes said series of said self-identification packets.

21. The data transfer control device as defined in claim 1, wherein data transfer is performed in accordance with the IEEE 1394 standard.

22. The data transfer control device as defined in claim 2, wherein data transfer is performed in accordance with the IEEE 1394 standard.

23. The data transfer control device as defined in claim 3, wherein data transfer is performed in accordance with the

IEEE 1394 standard.

24. The data transfer control device as defined in claim 4,  
wherein data transfer is performed in accordance with the  
5 IEEE 1394 standard.

25. The data transfer control device as defined in claim 7,  
wherein data transfer is performed in accordance with the  
IEEE 1394 standard.

10 26. The data transfer control device as defined in claim 11,  
wherein data transfer is performed in accordance with the  
IEEE 1394 standard.

15 27. The data transfer control device as defined in claim 15,  
wherein data transfer is performed in accordance with the  
IEEE 1394 standard.

28. Electronic equipment comprising:

20 a data transfer control device as defined in any of claims  
1 to 27;

a device for performing given processing on data that has  
been received from another node via said data transfer control  
device and said bus; and

25 a device for outputting or storing data that has been  
subjected to said processing.



29. Electronic equipment comprising:

a data transfer control device as defined in any of claims  
1 to 27;

a device for performing given processing on data that is  
5 to be sent to another node via said data transfer control device  
and said bus; and

a device for fetching data to be subjected to said  
processing.

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